

# AC centrifugal fan

forward-curved, dual-intake  
with housing (flange)

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## Nominal data

|                             |                   |            |            |
|-----------------------------|-------------------|------------|------------|
| Type                        | D2D146-BG03-17    |            |            |
| Motor                       | M2D068-GA         |            |            |
| Phase                       |                   | 3~         | 3~         |
| Nominal voltage             | VAC               | 400        | 440        |
| Nominal voltage range       | VAC               | 380 .. 440 | 380 .. 440 |
| Wiring                      |                   | Y          | Y          |
| Frequency                   | Hz                | 50         | 50         |
| Method of obtaining data    |                   | ml         | ml         |
| Valid for approval/standard |                   | CE         | CE         |
| Speed (rpm)                 | min <sup>-1</sup> | 2580       | 2650       |
| Power consumption           | W                 | 350        | 430        |
| Current draw                | A                 | 0.6        | 0.65       |
| Min. back pressure          | Pa                | 290        | 300        |
| Min. back pressure          | in. wg            | 1.16       | 1.2        |
| Min. ambient temperature    | °C                | -25        | -25        |
| Max. ambient temperature    | °C                | 60         | 60         |

ml = Max. load · me = Max. efficiency · fa = Free air · cs = Customer specification · ce = Customer equipment  
Subject to change

## Data according to Commission Regulation (EU) 327/2011

|                                   |   | Actual | Req. 2015 |
|-----------------------------------|---|--------|-----------|
| 01 Overall efficiency $\eta_{es}$ | % | 35.6   | 33.5      |
| 02 Measurement category           |   | A      |           |
| 03 Efficiency category            |   | Static |           |
| 04 Efficiency grade N             |   | 46     | 44        |
| 05 Variable speed drive           |   | No     |           |

Data obtained at optimum efficiency level.  
The ErP data is determined using a motor-impeller combination in a standardized measurement setup.

|                               |                   |      |
|-------------------------------|-------------------|------|
| 09 Power consumption $P_e$    | kW                | 0.22 |
| 09 Air flow $q_v$             | m <sup>3</sup> /h | 705  |
| 09 Pressure increase $p_{fs}$ | Pa                | 416  |
| 10 Speed (rpm) n              | min <sup>-1</sup> | 2750 |
| 11 Specific ratio*            |                   | 1.00 |

\* Specific ratio =  $1 + p_{fs} / 100\,000\text{ Pa}$

LU-110559

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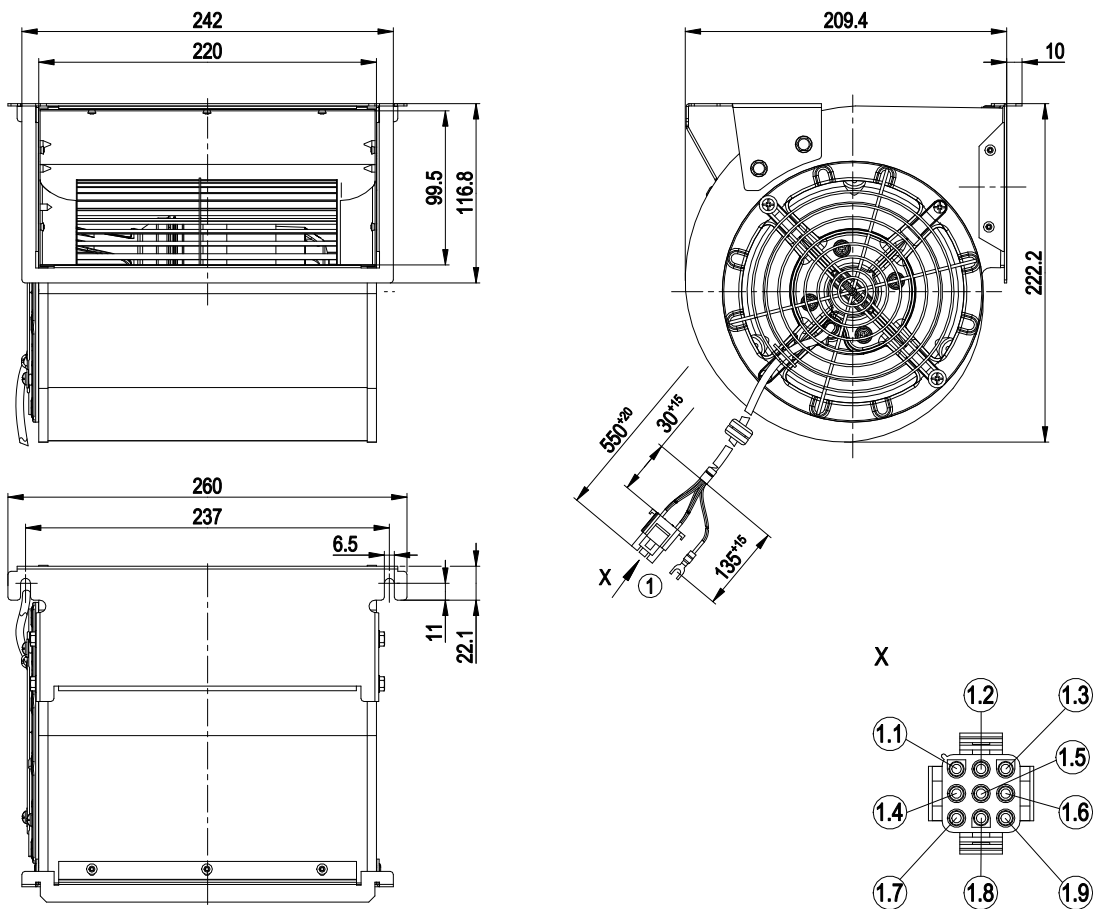
## Technical description

|                                                                            |                                                        |
|----------------------------------------------------------------------------|--------------------------------------------------------|
| Weight                                                                     | 5.6 kg                                                 |
| Size                                                                       | 146 mm                                                 |
| Motor size                                                                 | 68                                                     |
| Rotor surface                                                              | Painted black                                          |
| Impeller material                                                          | Sheet steel, painted black                             |
| Housing material                                                           | Sheet steel, galvanized                                |
| Guard grille material                                                      | Steel, coated with white-aluminum plastic (RAL 9006)   |
| Motor suspension                                                           | Motor mounted with brackets on one side                |
| Direction of rotation                                                      | Counterclockwise, viewed toward rotor                  |
| Degree of protection                                                       | IP55                                                   |
| Insulation class                                                           | "F"                                                    |
| Moisture (F) / Environmental (H) protection class                          | H1+                                                    |
| Max. permitted ambient temp. for motor (transport/storage)                 | + 80 °C                                                |
| Min. permitted ambient temp. for motor (transport/storage)                 | - 40 °C                                                |
| Installation position                                                      | Shaft horizontal                                       |
| Mode                                                                       | S1                                                     |
| Motor bearing                                                              | Ball bearing                                           |
| Touch current according to IEC 60990 (measuring circuit Fig. 4, TN system) | <= 3.5 mA                                              |
| Motor protection                                                           | Thermal overload protector (TOP) with basic insulation |
| With cable                                                                 | Axial                                                  |
| Protection class                                                           | I (with customer connection of protective earth)       |
| Conformity with standards                                                  | EN 60034-1; EN 60204-1; CE                             |
| Approval                                                                   | CSA C22.2 No. 100; CCC; UL 1004-1                      |

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## Product drawing

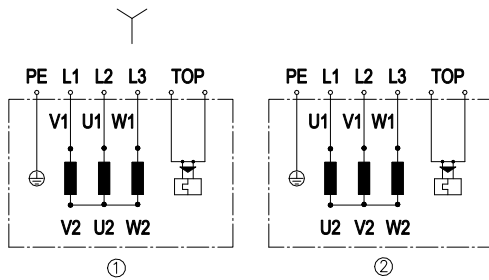


|     |                                                                                              |
|-----|----------------------------------------------------------------------------------------------|
| 1   | Cable PFA AWG20                                                                              |
|     | 9-pole connector housing TE 350720-1, 5x plug pin TE 926886-1, 1x spade terminal TE 130517-0 |
| 1.1 | TOP (gray)                                                                                   |
| 1.2 | not used                                                                                     |
| 1.3 | V1 (blue)                                                                                    |
| 1.4 | TOP (gray)                                                                                   |
| 1.5 | not used                                                                                     |
| 1.6 | not used                                                                                     |
| 1.7 | U1 (black)                                                                                   |
| 1.8 | not used                                                                                     |
| 1.9 | W1 (brown)                                                                                   |
|     | Accessory parts, included separately:                                                        |
|     | Guard grill                                                                                  |
|     | Tapping screw assembly (3x), tightening torque 1.6±0.2 Nm                                    |
|     | Zipped plastic bag                                                                           |

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## Connection diagram



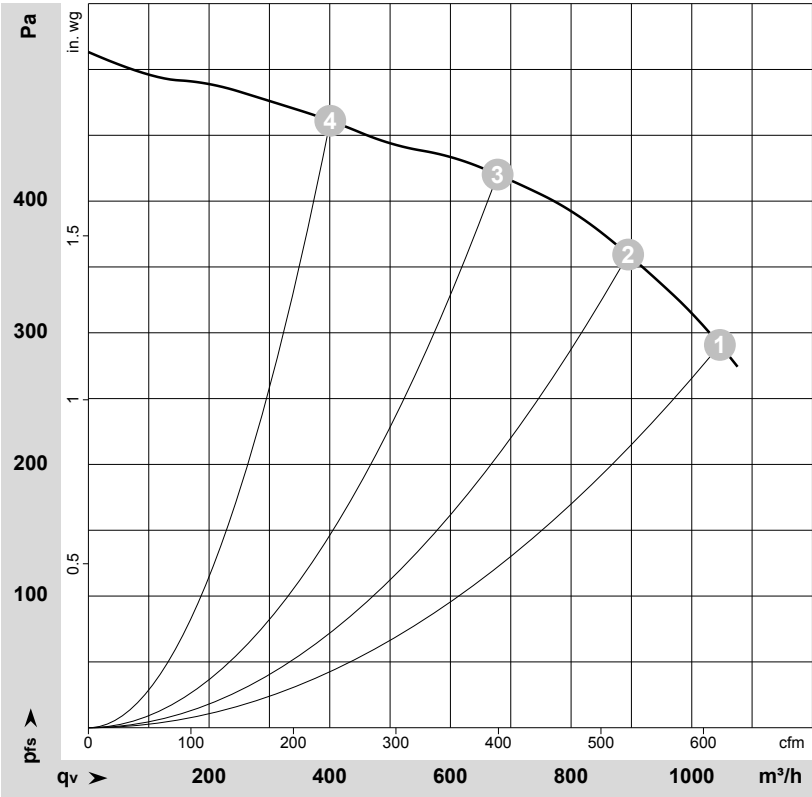
### Change of rotation direction by reversing two phases

|     |                            |
|-----|----------------------------|
|     | Three-phase motor          |
| Y   | Star connection            |
| 1   | Counterclockwise operation |
| L1  | = V1 = blue                |
| L2  | = U1 = black               |
| L3  | = W1 = brown               |
| 2   | Clockwise operation        |
| L1  | = U1 = black               |
| L2  | = V1 = blue                |
| L3  | = W1 = brown               |
| PE  | green/yellow               |
| TOP | 2x gray                    |

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## Curves: Air performance 50 Hz



$\rho = 1.15 \text{ kg/m}^3 \pm 2 \%$

Measurement: LU-110559-1

Air performance measured according to ISO 5801 installation category A. For detailed information on the measurement setup, contact ebm-papst. Intake sound level: Sound power level according to ISO 13347 / sound pressure level measured at 1 m distance from fan axis. The values given are valid under the specified measuring conditions and may vary due to conditions of installation. For deviations from the standard configuration, the parameters have to be checked on the installed unit.

## Measured values

|   | Wired | U   | f  | n                 | P <sub>e</sub> | I    | q <sub>v</sub> | p <sub>fs</sub> | q <sub>v</sub> | p <sub>fs</sub> |
|---|-------|-----|----|-------------------|----------------|------|----------------|-----------------|----------------|-----------------|
|   |       | V   | Hz | min <sup>-1</sup> | W              | A    | m³/h           | Pa              | cfm            | in. wg          |
| 1 | Y     | 400 | 50 | 2580              | 350            | 0.60 | 1045           | 290             | 615            | 1.16            |
| 2 | Y     | 400 | 50 | 2665              | 287            | 0.53 | 895            | 360             | 525            | 1.45            |
| 3 | Y     | 400 | 50 | 2755              | 224            | 0.46 | 680            | 420             | 400            | 1.69            |
| 4 | Y     | 400 | 50 | 2830              | 168            | 0.41 | 400            | 460             | 235            | 1.85            |

Wired = Wiring · U = Voltage · f = Frequency · n = Speed (rpm) · P<sub>e</sub> = Power consumption · I = Current draw · q<sub>v</sub> = Air flow · p<sub>fs</sub> = Pressure increase